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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,192

07/11/2003

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/618,192	Applicant(s) CROWLEY ET AL.	
	Examiner Steven Loke	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-44 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) 38, 39 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40-44 and 47-49 is/are allowed.
- 6) ☒ Claim(s) 30 and 31 is/are rejected.
- 7) ☒ Claim(s) 32-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 30-37 are objected to because of the following informalities: Claim 30, line 2, the phrase "top surface" is unclear whether it is being referred to "a top surface". Appropriate correction is required.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 30 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn et al.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In regards to claim 30, Glenn et al. show all the elements of the claimed invention in figs. 3-4. It is a semiconductor package, comprising: a die [14] having a bottom surface and a top surface; a die pad [20] having first and second surfaces, the bottom surface of the die [14] being mounted to the first surface of the die pad [20]; a plurality of leads [1-8], each of the leads having first and second surfaces, at least some of the leads [5-8]

being integrally connected to the die pad [20]; a conductive strap [112] electrically connected to and extending between the top surface of the die [14] and the first surface of at least one of the leads [1-3] which is not integrally connected to the die pad [20]; and an encapsulant material [18] encapsulating the die, at least a portion of the die pad, at least a portion of the conductive strap, and at least a portion of each of the leads such that the second surface (bottom surface) of each of the leads is exposed in and substantially flush with an exterior surface of the encapsulant material.

In regards to claim 31, Glenn et al. further disclose a portion of the conductive strap [112] is exposed in the encapsulant material [18].

4. Applicant's arguments filed 6/14/04 have been fully considered but they are not persuasive.

It is urged, in page 12 of the remarks, that the leads [1-8] simply protrude from the respective opposed sides of the encapsulant [18] and the leads [1-8] are not being exposed in and substantially flush with an exterior surface of the encapsulant material. However, fig. 4 of Glenn et al. discloses the bottom surface of each of the leads [1-8] is exposed in and substantially flushes with an exterior surface of the encapsulant material [18]. The bottom surface of each of the leads [1-8] and the exterior surface of the encapsulant [18] are exposed to the outside environment. Therefore, Glenn et al. meet all the limitation of the claimed invention.

It is also urged, in page 12 of the remarks, that Glenn fails to teach a portion of the conductive strap is exposed in the encapsulant material. However, fig. 4 of Glenn et al.

shows a top portion of the conductive strap [112] is exposed in the encapsulant material [18].

5. Claims 32-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 40-44 and 47-49 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: The first major difference in the claims not found in the prior art of record is at least a portion of the second surface of the die pad is exposed in the encapsulant material. The second major difference in the claims not found in the prior art of record is the conductive strap includes a through hole which is filled with the encapsulant material. The third major difference in the claims not found in the prior art of record is each of the leads includes a recessed portion which is adjacent to the second surface thereof and is filled with the encapsulant material. The fourth major difference in the claims not found in the prior art of record is the die pad has a recessed portion which is adjacent to and extends about the periphery of the second surface thereof, and the recessed portion of the die pad being filled with the encapsulant material. The fifth major difference in the claims not found in the prior art of record is the conductive strap includes a flange portion having the lip formed thereon, a conductive layer is disposed between the flange portion and the die and between the lip and the die, and the conductive layer has a first thickness adjacent to the lip and a second thickness adjacent to the flange portion, the first thickness exceeding the second thickness.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sl
August 27, 2004

Steven Loke
Primary Examiner

A handwritten signature in black ink that reads "Steven Loke". The signature is written in a cursive style with a large, stylized "S" and "L".